

Mitral valve repair with bypass surgery may improve heart function

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Patients who had leaky mitral heart valves repaired along with bypass surgery had with healthier hearts than those who had bypass only, according to new research presented in the American Heart Association's Emerging Science Series webinar.

The mitral valve separates the heart's left atrium (upper chamber) from the [left ventricle](#) (lower chamber). It has two flaps, or cusps, and if the flaps don't close properly, the valve will leak.

"Many [patients](#) who need bypass surgery have mild to moderately leaky mitral valves because [coronary artery disease](#) causes the heart to enlarge and, in the process, pulls the mitral valve apart," said K. M. John Chan, B.M.B.S., F.R.C.S., C.Th., the study's lead author and a senior clinical research fellow at Imperial College in London, U.K. The patients in this study had a specific type of mitral valve leak called functional ischemic mitral regurgitation.

The dual procedures of valve repair and [coronary artery bypass graft surgery](#) (CABG) are typically reserved for patients with severely leaking valves. However, patients with moderately leaking valves who had both procedures had more improved [exercise capacity](#) and heart functioning, and their hearts were more likely to return to a more normal size than those with CABG-surgery alone.

Blood markers associated with heart failure also improved for patients who had the dual surgeries versus CABG-only patients.

Even though surgeons don't typically repair valves with moderate leaks during bypass, CABG patients with leaky mitral valves fare more poorly after surgery than patients whose valves don't leak, Chan said.

Researchers randomized 60 patients to receive CABG only or CABG and mitral valve repair. All patients had moderate mitral valve leaks caused by ischemic heart disease. They tested patients' exercise capacity, [heart function](#) and heart size before and one year after surgery.

In the year after surgery:

- Patients who had mitral valve repair and CABG improved 3 ml/kg/min in exercise capacity compared to 1 ml/kg/min in patients who only had CABG.
- The heart size was reduced towards a more normal size by 24 percent in the dual-procedure patients versus 10 percent in the CABG-only group.
- Blood levels of plasma-BNP, which is increased when the heart muscle is over-stretched or in heart failure, was lower in those who had the dual procedure (54.8 pmol/l) compared to those with CABG only (108.9 pmol/l).

Provided by American Heart Association

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